



Cause and Effect: Height vs. Dominant Hand Reaction Time

How to Get a Random Sample from CensusAtSchool

Go to the CensusAtSchool [Random Sampler](#) to download a sample.X

Reference year: (select year)

Sample size: At least 20 students

Select questions: Height and Dominant Hand Reaction Time

Location: Select location

Year level: (select a range of year levels)

To protect privacy there is a rule built into the sampler that the requested sample size cannot exceed 10% entered.



Please note: This task is designed to be completed by hand. It can also be completed using a computer or CAS calculator.

Task:

1. In your CensusAtSchool random sample, find the question about height, and the question about dominant hand reaction time, and enter both sets of twenty numbers as:

- ✓ two columns in Excel, or
- ✓ two separate lists in your CAS calculator, or
- ✓ as a table in your workbook

Outliers are any values which appear to be very different from the majority of the data. They are extreme values and may have been caused by an error. They should be removed from your data set and replaced with the next value from your list.

2. Create a scatter plot, with height as the independent variable (x) and dominant hand reaction time as the dependent variable (y).

3. Examine the linear relationship of your scatter plot. Circle or lightly shade the correlation of your scatter plot in your table below.

Strong Positive Correlation	Weak Positive Correlation	No Correlation	Weak Negative Correlation	Strong Negative Correlation
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Tip: Use these example correlations to help you select the correct correlation for your graph.



- 4.** Does your graph suggest a relationship between height and dominant hand reaction time? Explain.
- 5.** If someone found there was a correlation between height and dominant hand reaction time, is this the same as saying a person's reaction time is **caused** by their height? Explain.
- 6.** Can height be used to predict dominant hand reaction time? Draw conclusions from your graph, and write a summary paragraph. Some key words to use are: random sample, linear, correlation, cause, effect.